

REMARKS/ARGUMENTS

Claims 1-53 are pending in this patent application. Claims 32-44 are withdrawn. Claims 1-31 and 45-53 currently stand rejected. Claims 10 and 45 have been amended. The amendments are supported at least by paragraph [0040] and [0042] of the specification and the associated figures of the current application. No new matter has been introduced by this response.

CLAIM REJECTIONS UNDER 35 USC § 103

Claims 1-14, 23/(10) [sic], 45-52 and 54 stand rejected as being obvious over Pourahmadi (US20020055167) or Anderson (US20010036672) in view of Levine (US6031286). Claims 15-22, 23/(17,22) [sic] and 24 are rejected as being obvious over Pourahmadi in view of Levine and further in view of Freeman (US6653124). Claims 25-31 stand rejected as being obvious over Pourahmadi in view of Levine and Freeman and further in view of Kaplan (US6453928) and/or Webster (US6521188). Claim 53 is rejected as being obvious over Pourahmadi in view of Levine and further in view of McDevitt (US20030064422).

Applicants have carefully considered the Examiner's reasoning and respectfully disagree.

The *prima facie* obviousness burden lies on the Examiner to show at least the following: 1) that the art teaches every element of the claimed invention,¹ 2) that there is a motivation to combine or modify the art,² and 3) that there is a reasonable expectation of success in making that combination or modification. While the expectation of success need not be absolute, there does need to be a **reasonable** expectation of success. *Takeda Chem. Indus. v. Mylan Labs., Inc.*, 417 F. Supp. 2d 341, 371 (Fed. Cir.2006) ("While a reasonable expectation of success must be shown, in order to show *prima facie* obviousness it is not necessary to show that success was absolutely

¹ See e.g., MPEP 2143.03 ("All Claim Limitations Must Be Taught or Suggested").

² KSR did not negate the motivation to combine test, but only cautioned against its rigid application. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007) ("When it first established the requirement of demonstrating a teaching, suggestion, or motivation to combine known elements in order to show that the combination is obvious, the Court of Customs and Patent Appeals captured a helpful insight. . . . a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. . . . it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.").

predictable.”); *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991) (discussing the obviousness case and stating that one element is “whether the prior art would also have revealed that . . . those of ordinary skill would have a reasonable expectation of success.”).³

(a) Levine cannot form channels of 200 microns (width) by 150 microns (depth).

In the Office Action, the Examiner cited various paragraphs of Pourahmadi and Anderson, **but not Levine**, to show that the channels or chambers in the prior art can be of various width and depth. The Examiner then stated that “[i]t would have been obvious to narrow the channel dimension ranges disclosed by Pourahmadi and Anderson to construct 200 micron x 150 micron channels if it was determined through experimentation that these measurements produced the most desirable fluid movement.” (Page 14 of the Office Action.)

However, as acknowledged by the Examiner on page 4 of the Office Action, neither Pourahmadi nor Anderson discloses “buried channels.” Instead, Levine was relied upon as the primary reference for the feature “buried channels.” However, as shown in the attached declaration of the inventor of the current application, Applicants respectfully submit that Levine does **NOT** disclose a width of 200 micron, nor a depth of 150 micron. The technique of Levine only allows the manufacture of very small micropipes, derived from very narrow trenches with well-defined aspect ratio and deposition conditions. Levine is **NOT** suitable to form 200 micron (width) by 150 micron (depth) channels as in the current application. See attached Declaration Under 37 CFR 1.132 by Mario Scurati (“Declaration”).

As stated in MPEP §716.01(a), affidavits or declarations, when timely presented, **must be considered** by the examiner in determining the issue of obviousness or claims for patentability under 35 U.S.C. §103. Accordingly, Applicants respectfully request a reconsideration of the obviousness rejection in light of the feature of 200 micron (width) by 150 micron (depth) and the declaration submitted by Applicants.

³ See also MPEP 2143.02 entitled “Reasonable Expectation of Success Is Required”.
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(b) Pourahmadi or Anderson, even in combination with Levin, does not teach or render obvious buried amplification channels underneath pre-treatment channels with heaters arranged between them.

Claims 10 and 45 are hereby amended to recite “wherein the buried channel is an **amplification** channel arranged underneath the pre-treatment channel and wherein the amplification channel is thermally coupled to a **heater** that is arranged between the amplification channel and the pre-treatment channel.”

Applicants respectfully submit that neither Pourahmadi nor Anderson, even in combination with Levin, teaches or renders obvious buried amplification channels arranged underneath pre-treatment channels with heaters arranged in between. The amended claims provide a compact design and, at the same time, a precise control over the temperature of the amplification channel. This feature is not taught or suggested in the prior art. There is no motivation to combine the cited references to reach the claimed invention, because the Levine is to form simple and inflexible channels, and one of ordinary skill in the art will not regard Levine as a way to modify either Pourahmadi or Anderson. Even if they are combined, there is no reasonable expectation of success because the cited references are almost completely devoid of information in this respect to enable people skilled in the art to make a device as set forth in the amended claims. Accordingly, Applicants respectfully submit that Claims 10 and 45 as amended in the current response are patentable over the cited references.

DOUBLE PATENTING

Claims 1, 3, 4, 6, and 7 remain provisionally rejected for obviousness-type double patenting over co-pending application 09/874382 (6/4/01). Similarly, claims 1, 3-7 and 10-13 remain rejected over 11/017272 (11/20/04), claims 1, 6, 7 are rejected over 11/009171 (10/10/04), and claims 1-3, 5-7, 10-14 and 45-49 are rejected over 11/092415 (03/29/05). Each of these applications was filed after the first US filing date of the current application (09/545,260, filed 4/7/00). Therefore, Applicants maintain their position that any rejection based on provisional obviousness-type double patenting should be directed to the later filed application(s), instead of to the current application. Accordingly, Applicants respectfully request withdrawal of the double

patenting rejection. However, if deemed absolutely necessary, Applicant may file a terminal disclaimer on notification of allowable subject matter.

CONCLUSION

Applicants have addressed all of the Examiner's rejections. Applicants believe that the claims are now in condition for allowance and respectfully request that the Examiner grant such action. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the number noted below. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 50-3420 reference 31175803-004001 (Valoir).

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Respectfully submitted,

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